



ORGANIC ELECTRO-LUMINESCENT DEVICE, MANUFACTURING
METHOD FOR THE SAME, AND ELECTRONIC EQUIPMENT

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BACKGROUND OF THE INVENTION

1. Field of Invention

[0001] The present invention relates to an organic electro-luminescent device provided with electric light emitting elements used for displays, and display light sources, and the like, a manufacturing method for the same, and electronic equipment.

2. Description of Related Art

[0002] The development of light emitting elements using organic materials for spontaneous light emitting-type displays in place of liquid crystal displays has recently been proceeding at a rapid pace. With respect to an organic electro-luminescent device equipped with a light emitting component using an organic material in the light emitting layer, a related art method for forming a low molecular weight layer using an evaporation process is disclosed from page 913 in Appl. Phys. Lett. 51 (12), 21 September 1987, and a related art method for coating a large molecular weight layer is disclosed from page 34 of Appl. Phys. Lett. 71 (1), July 1997.

[0003] In the case of using a low molecular weight material for coloring, a light emitting material differing from that of mask lifting is vapor deposited and formed onto the desired image. On the other hand, in the case of a large molecular weight material, much attention is being placed on performing the coloring using an ink jet method, due to refinement and ease with which the patterning can be accomplished. The following examples are related art methods for forming an organic electro-luminescent component by such an ink jet method: Japanese Patent Application, First Publication No. Hei 7-235378, Japanese Patent Application, First Publication No. Hei 10-12377, Japanese Patent Application, First Publication No. Hei 10-153967, Japanese Patent Application, First Publication No. Hei 11-40358, Japanese Patent Application, First Publication No. Hei 11-54270, and Japanese Patent Application, First Publication No. Hei 11-339957.

[0004] In addition, from the standpoint of component manufacturing, in order to enhance the light emitting efficiency and durability, the formation of a hole injection/transport layer between the electrode and light emitting layer is widely performed as disclosed from page 913 in Appl. Phys. Lett. 51 (12), 21 September 1987. Formation of a layer has been performed by a coating process, such as spin coating or the like, using a conductive macromolecule as the buffer layer and/or hole injection/transport layer, e.g., a polythiophene derivative and/or polyaniline derivative (Nature, 357, 477, 1992). With